CITY OF FALLS CHURCH, VIRGINIA

Stormwater Fee Billing Options Assessment

Evaluation of Funding Alternatives for Stormwater Management
Scope of Work Phase 2 – Task 1

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Stormwater Fee Billing Options Assessment

1. Introduction

This report is designed to assist the City of Falls Church in the assessment of potential billing options for a stormwater user fee. During the assessment process, AMEC worked with City staff to understand how existing billing systems operate and their capacity to integrate a stormwater user fee. The organizational roles and potential responsibilities of relevant City departments were also evaluated.

Development of a stormwater user fee and integration with a billing system require specific datasets, such as parcels, account information, and impervious area. It is also important for information from different sources to link together seamlessly. The available supporting data from the City's Department of Public Works (GIS), Department of Public Utilities, Department of Finance (Real Estate Assessment), and the Treasurer's Office was analyzed to determine whether any needs or potential billing hurdles exist for stormwater fee development.

AMEC also investigated and modeled potential user fees structures and ad valorem rates (real property tax) to evaluate how the costs of a stormwater program might be distributed among the City's property owners.

This report summarizes the stormwater fee billing process, describes the two most likely billing mechanisms, identifies key data issues, and presents basic comparative information for rate methodologies.

2. Basic Components and Process

The potential stormwater user fee must have an entire billing system behind it that supports fee calculation and database maintenance, invoicing customers, collecting and processing payments, managing fee changes or credits, and providing customer service. The general elements that make up a potential stormwater utility's billing system are described briefly below:

- ***Impervious Area Database*** – a GIS (spatial) database of impervious surfaces mapped from aerial imagery; it typically includes the results of measurement of the impervious area on each property and a property identifier such as a parcel identification number.

- ***Account and Property Information*** – a current listing of customer data including property and/or utility account information.

- ***Parcel Database*** – a spatial database of parcel boundaries showing the location and boundaries of each property; this is the basis for calculations of lot size and impervious area per parcel.

- ***Stormwater Billing Database*** – created from the impervious, parcel, and account information, along with other rate factors included in calculation of the stormwater fee; this "Master Account File" holds the stormwater fee billing data.

- ***Invoicing and Collection*** – this process includes generating and mailing invoices, collecting and processing payments due, and performing accounting functions; net revenue will be transferred to the stormwater enterprise fund.

- ***Customer Service and Appeals*** – a formal process that provides customer support for both basic fee questions and technical stormwater billing and collection issues; includes appeals and credits, fee-corrections or adjustments, and customer information-updates.

- ***Stormwater Enterprise Fund*** – the fund for stormwater program activities managed by the City; this is where revenue from the user fee, and potentially other sources, are deposited.

It is the City's stated preference that the Department of Public Works will handle management of the stormwater fee data and relative GIS information. All fee calculations would be prepared by DPW and delivered in the appropriate file-format to the biller. Once fees are invoiced and collected, DPW will manage the stormwater enterprise fund, as well as customer support, appeals, and fee modifications.

3. Potential Billing Options

The City identified two existing billing mechanisms that could potentially support the stormwater fee billing requirements: the real estate tax system and the water/sewer utility system. It was determined that the stormwater fee could be billed through either option, provided that MUNIS – the software used to operate both systems – can support the required changes. Since several other localities in Virginia using MUNIS have incorporated stormwater fees (including the City of Newport News), it is assumed that the City will also be able to do so.

Following is a description of each system and key considerations.

Real Property Tax Billing System

The stormwater user fee could be included as a line-item on the City's property tax statement sent to property owners. The Treasurer's Office would bill and collect payments, and then deposit fee revenue into the stormwater enterprise fund.

An advantage to using the tax bill is that fee collection rates are typically high because the Treasurer applies payments to fees and special assessments before taxes; a short payment would leave the real estate tax unpaid. In such a case, the Treasurer would take standard enforcement action by placing a lien on the property. This helps to prevent delinquencies and bad debt write-offs.

The cost for the Treasurer's office to bill and collect the stormwater fee depends on whether stormwater fee information can be imported automatically into MUNIS, or if it would require a manual effort. City Treasurer, Cathy Kaye, has requested information from MUNIS about modification timeframes, costs, input data formats, and fee-handling options. Modifications to MUNIS are not expected to be extremely costly, but are expected to take a significant amount of time (several months).

There are approximately 300 tax-exempt parcels that will require special attention. To maintain the integrity of the user fee, these properties cannot be differentiated from other like properties that receive stormwater services unless exempted under §15.2-2114 of the Code of Virginia (e.g., public roads, federal, state, and other public entities holding an MS4 permit, etc.). Information on non-taxed properties is transmitted by Real Estate Assessment to the Treasurer, but these accounts are coded so that they are not billed by MUNIS. They could be flagged to receive a stormwater-only billing statement from the Treasurer's Office. However, this will require the development of special coding to separate out these properties.

The required lead-time for data development and MUNIS enhancements is an important consideration relative to the rigid annual schedule on which the property tax system operates. Real property tax statements are mailed twice a year – the first is sent out in late April and is due June 5th; the second is sent out in November and is due December 5th. Stormwater fee billing data would normally need to be provided in March or early April, but the initial fee setup in the first year would require additional time for beta testing. To include fees on FY2014 tax statements, a test-file would be needed in January. It is assumed that the City Council will adopt the rate for the stormwater fee at the same time as the real property tax rate and the budget are approved in late April (the FY2013 budget was adopted by City Council on April 23, 2012).

Data maintenance and fee-calculations would only be required once or twice a year using this billing method since fees would be billed annually or bi-annually. Corrections or credits could be handled throughout the year, or could be limited to a certain time-period following billing, depending on how the City wishes to define policies for appeals and credits.

Since stormwater user fees and property taxes are both parcel-based, integrating the two sets of information is relatively easy. There will be a one-to-one match, via parcel identification number, between stormwater fees and properties in the City being billed. It is important to note that there are known discrepancies between the real estate data and the City's parcel data. Specifically, there are approximately 80 properties that do not currently match due to the differing schedules and processes for changing land and assessment records. These non-matches would need to be resolved by the City prior to finalizing the Master Account File.

Water and Sewer Utility Billing System

Alternatively, the stormwater user fee could be included on the City's existing utility bill sent to water and sewer customers. Using MUNIS, Public Utilities would incorporate the stormwater fee into the utility billing statements, which are mailed to customers by an external vendor. The utility payments collected are sent to the Treasurer's Office, which would transfer stormwater fee revenue to the stormwater enterprise fund.

Stormwater fee collection could be enforced by Public Utilities in the same manner as water and sewer fees. Water could be shut off for customers with severely delinquent payments. However, that may not carry much weight for properties without water or sewer service or for short-term renters, although there are legal mechanisms to pursue payment from the actual property owner. That notwithstanding, the City is authorized by the Code of Virginia to treat non-payment of a stormwater user fee in the same manner as

non-payment of real estate tax and to place a lien on a property regardless of the billing mechanism. The City may need to explore this additional enforcement option should delinquent payments become an issue.

Just as with the Treasurer's system, the cost and setup timeframe for Public Utilities to bill and collect the stormwater fee will depend on what it takes to make appropriate modifications to the MUNIS utility module. An estimated 250 new stormwater-only accounts would have to be created by Public Utilities staff for properties without existing water or sewer service from the City. Examples include parking lots or warehouse properties without water, where impervious areas would be charged a stormwater fee. Outreach may be necessary for property owners receiving outside water service since they would receive a new City bill for stormwater. Likewise, special coding may need to be developed for such properties in order to correctly identify them in MUNIS. In order to avoid the potential complexity of calculating stormwater fees and, potentially credits, DPW would provide fee amounts ready for import to the utilities billing system. To satisfy the MUNIS utility module requirement for a calculation to be performed, the fee values can simply be multiplied by one within MUNIS. At least four to six months should be reserved prior to the initial billing date for account setup, address verifications, data development, and beta-testing.

It is expected that stormwater fees would match the existing billing frequencies for utility bills – monthly for large water customers and quarterly for all others. This may provide the advantage of a more immediate and more constant revenue stream for the stormwater program. In addition, smaller, more-frequent payments may be easier for customers to work into their budgets than an annual or bi-annual amount. Stormwater fee data would generally need to be provided one month in advance of each billing cycle. For initial setup and testing, an extra few months may be necessary to test integration. Stormwater billing data and fee calculations would need to take place on the same frequency as the utility billing. Account information is dynamic, and changes would need to be actively reflected in the stormwater database to ensure fee integrity.

All utility accounts are set up by property address and current water/sewer customer - not to parcels or property owners. The parcel-based stormwater fees would have to be matched with the appropriate accounts where multiple water/sewer accounts exist on a single property, and where multiple properties are served by a single water/sewer account. Due to the nature of address formats and data entry, not all accounts and parcels readily link via property address. After a basic address-standardization process between the two in AMEC's testing, 943 of 3,981 existing accounts did not match a parcel address. 196 parcels had no address point, and an estimated 250 properties require a new account to be generated. The data refinement and development needs to set up and maintain this billing method are significantly greater than for the property tax method.

Billing System Comparison

Table 1 provides a comparison of major factors and considerations when determining which billing system to use for delivery of a stormwater user fee.

Table 1. Comparison of Real Property Tax and Utility Billing Systems

Factor/Consideration	Real Property Tax	Water/Sewer Utility
Platform	MUNIS	MUNIS
Billing Responsibility	Treasurer's Office	Public Utilities using vendor
Collection	Treasurer's Office	Treasurer's Office
Enforcement	Same manner as real property tax; lien on property	Two options – same manner as water/sewer utility; or same manner as real property tax with lien on property
Need for Stormwater-Only Bills	~ 300 tax exempt parcels require special attention	~ 250 parcels may require new accounts due to no utility service
Timing	Twice annually (due June 5th and December 5th)	Monthly for large customers; quarterly for others
Impact on Large Payers	Two payments annually may be more difficult for larger customers to budget	Monthly billing may make it easier for larger customers to budget
Data Maintenance	Once annually; less complicated since both the fee and the real property tax are parcel-based	Monthly; more complicated since the water/sewer utility is not parcel based
Parcel/Bill Integration	Almost one-to-one match, with ~ 80 properties that need attention	Considerable work required for integration; 943 of 3,981 existing accounts do not match a parcel address; 196 parcels have no address point
Public Perception	Greater risk of public perception of the user fee is a tax	Lesser risk of public perception of the user fee as a tax

Although each billing mechanism has its advantages and disadvantages, AMEC recommends that the City consider the use of the real property tax billing system. This recommendation is based primarily on the additional level of effort that it will take for the City to properly integrate parcel and billing information using the utility bill and to then maintain this system in the long-term.

4. Supporting Data

Relevant GIS system information and data was provided by DPW to AMEC for review, and was discussed with City staff during the GIS and Billing System Assessment Meeting in August 2012. The City has high-quality impervious data, good spatial representation of parcel boundaries, and recent high-resolution aerial imagery – all of which are critical components for developing an impervious-based stormwater fee and for supporting the stormwater billing system. On the other hand, it was determined that data is provided and or/managed by several different sources, and that there are no City staff currently dedicated to GIS data development or maintenance. Key information about the existing data and the needs identified are summarized below.

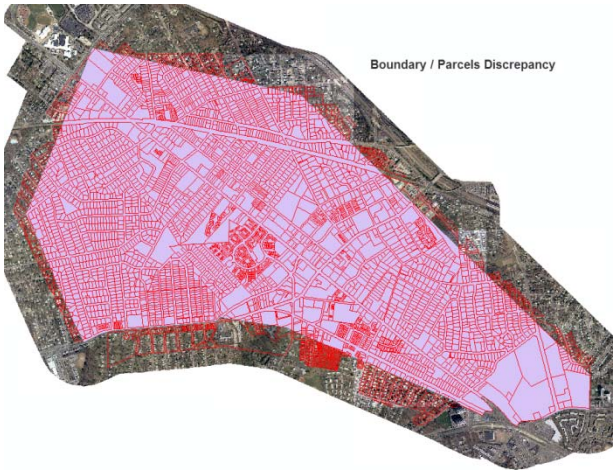
- ***Aerial Imagery*** – The City's most current imagery is from 2009, collected as part of the Virginia Base Mapping Program (VBMP) Orthophotography Project. The Commonwealth of Virginia contracted with the Sanborn Map Company to provide 200 scale, one-foot pixel resolution, natural color orthophotography to the Virginia Geographic Information Network (VGIN). Updates to imagery are dependent on the state's acquisition schedule; the next planned collection period for the eastern portion of the state is in 2013, which would be available for use in 2014.

- ***Impervious Data*** – Impervious features, including edge of pavement, parking lots, driveways, and buildings were also mapped by Sanborn as part of the VBMP in 2009. The features were hand-digitized from the 2009 one-foot resolution orthophotos, and include structures with roofs and paved/concrete surfaces having an area coverage of 200 square feet or greater. At a 200' scale (1"=200', or 1:2,400), the National Map Accuracy Standard (NMAS) for horizontal accuracy is +/- 6.67 feet. Sanborn's impervious product is rated at 85% NMAS or better for all mapped features, and would support high-confidence measurements of impervious to the nearest 100 square feet. As newer imagery is made available, the impervious data will need to be reviewed and updated. Since the City is largely built-out, the effort required is likely to be fairly small. Updates may also be included with the 2013 imagery through the VBMP, though that has not yet been confirmed.

- ***Parcel Information –*** Data related to parcels exists in several forms, including: GIS parcel boundaries for area and location, land record information from the ProVal system, and assessment information from the tax system. The spatial parcel data (GIS) is managed by WorldView; updates to reflect changes within the ProVal database would need to be requested. Currently, discrepancies between ProVal and WorldView data are not actively resolved by either entity. They would need to be addressed in support of stormwater fee development, however, to properly appropriate fees and to maximize revenue. As discussed in Section 3, there were approximately 80 parcels identified that were not active in the ProVal data.

- ***Parcel Classification –*** For stormwater funding development, it is important to be able to cleanly identify certain groups of parcels such as tax-exempt, non-residential, condos, common-areas, and single-family properties. Single family residences (as classified by City's tax assessment property code) can be attached, like condos or townhomes, or detached houses on larger lots, so the distinction between them becomes important to rate structure and policy discussions. Three primary terms are referenced in this report: Single Family Detached (SFD), Single Family Attached (SFA), and Non-Single Family (NSF). The data provided included useful property class information for residential versus non-residential classification, but AMEC did not find any additional indicators to help separate SFD from SFA properties. Attached single family properties were visually identified for purposes of the data and revenue analysis. If applicable to the rate structure, the classifications would need to be reviewed and verified by City staff, or refined with additional property information, before building a final stormwater fee database.

- ***Parcels Split by the City's Boundary*** – The City's boundary crosses through some parcels along its border. The parcel data included a "Status" field that seems reliably to indicate whether parcels are 'IN' or 'OUT' of the City, however the source intended purpose of the status is unclear. It is important to note that most (64 of 68) border parcels with the 'OUT' attribute do not have RPC (unique parcel identification) numbers needed to link them with assessment data and the tax system. In addition, many 'IN' parcels have large portions of area outside the boundary. Only the portions of properties within the City boundary may be assessed fees, though a minimum area would need to be set to eliminate tiny parcel fragments. AMEC recommends 200 square feet as appropriate for a minimum parcel area based on the City's GIS and the NMAS accuracy standard discussed under "Impervious Data" on page 6.



- ***Condo Units and Townhomes with Common Area*** – There are approximately 20 condominium complexes in the City. These will require special handling in the user fee database to ensure fair calculation and distribution of the stormwater fee, due to the way the parcels are identified and indexed. To assign the fee from commonly-owned property among condo or townhome units a billing policy will need to be developed. Typically the costs are divided up by par value (the recorded legal responsibility that each owner has toward common area) or evenly pro-rated where par values are not available.

- ***Fee-Exempted Properties*** – Some properties are exempted from stormwater user fees by the Code of Virginia. These will need to be identified and flagged in the stormwater database as non-billed properties.

- ***Address Points*** – This spatial representation of address locations is not actively maintained or updated at this time. If fees are billed with water utility accounts, this layer may need to be corrected.

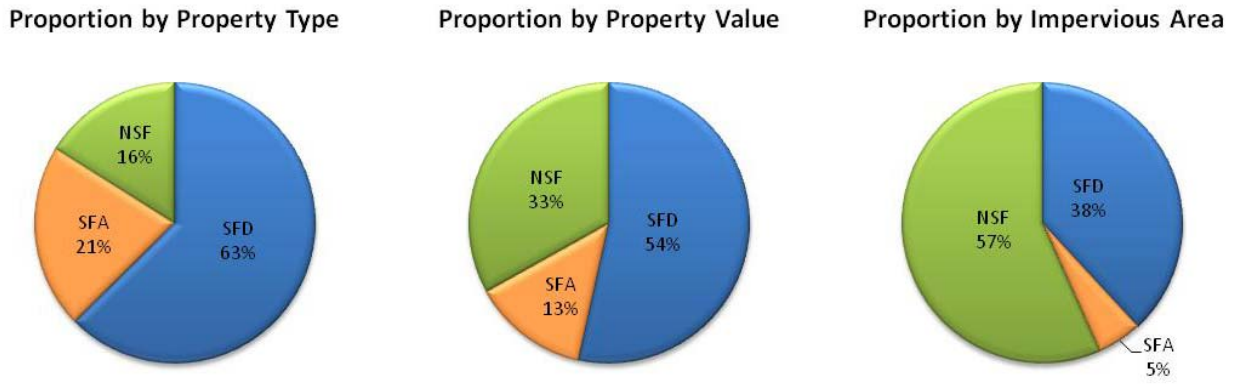
- ***GIS Support Needs –*** A stormwater billing system will be largely tied to GIS and will require some in-house knowledge about how to maintain the fee data. The process of administering the GIS and master account file is anticipated to require approximately 0.5 FTE staff.

5. Revenue Generation Methodologies

The City is considering two potential funding methods: an ad valorem tax and a stormwater user fee. AMEC evaluated the City's property information and developed a fee model to assess how each option would work. This section summarizes key information for each potential methodology.

Characteristics of Property in Falls Church

An ad valorem funding mechanism would be based on property value and tax status. A stormwater fee would be based on impervious area (IA) and would be charged to all properties unless exempt under state law. The property base in Falls Church is primarily made up of detached single family residential (SFD) houses. Approximately 63% of the parcels in the City are SFD. Attached single family lots (SFA) make up another 21% of the total. The non-single family (NSF) category includes all other kinds of property such as commercial, apartments, mixed-use, multi-family, etc. Only 16% of the properties in Falls Church are NSF parcels. However, that 16% represents 33% of total property value and 57% of total impervious area. This relationship is illustrated in the charts below.



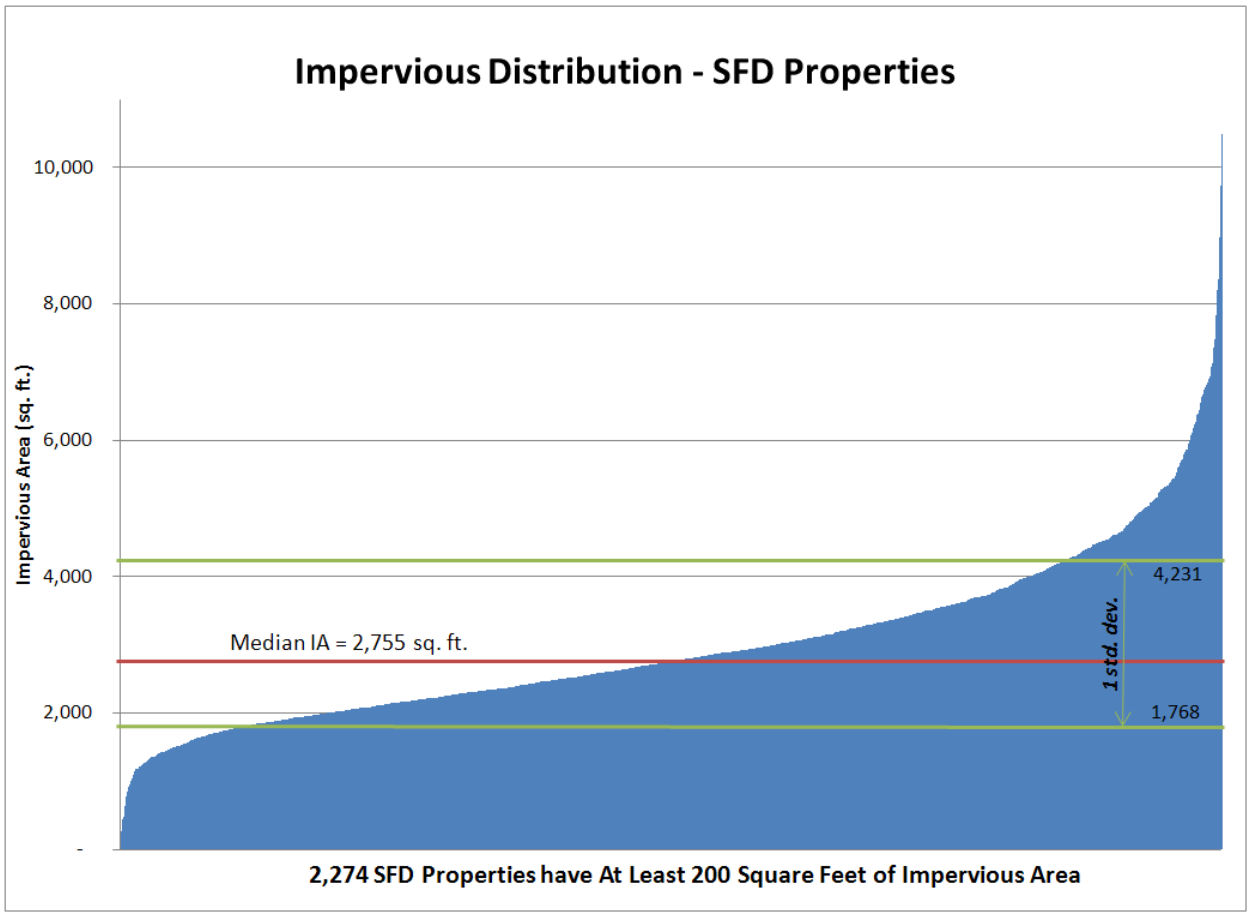
User Fee Rate Structure Options

There are several ways of structuring a stormwater user fee depending on the robustness of the underlying information about impervious surface cover. Decisions about rate structure will impact the number and distribution of billing units in the City and will therefore affect how the cost of the stormwater program is distributed among property owners. In general, billing units can be in specific increments of impervious area, or can be related to an ERU (Equivalent Residential Unit); both are explored in more detail in the following sections.

<u>SFD/SFA Flat Charge – Equivalent Residential Unit</u>

Sometimes stormwater utilities charge a flat fee just to SFD (and often to SFA) properties, regardless of size or impervious area. Others charge these properties a tiered fee based on property characteristics such as lot size or intensity of development. These methods are generally chosen when there is no (or limited) impervious data for SFD/SFA properties, and when single-family housing characteristics (including lot size, development trends, and impervious area) are similar enough to be generalized.

In Falls Church, the impervious area on SFD/SFA properties is not so easy to generalize, because there is not a reliable correlation between lot size and impervious area, and because there is a very wide range of impervious values. Some lots have fewer than 1,000 square feet of impervious surface area while a significant number of lots have more than a quarter-acre of impervious surface area. The distribution of impervious area on SFD properties is illustrated by the graph below.



Based on this analysis, the ERU for the City is 2,755 square feet. Under a flat-fee approach, a SFD (and in this example a SFA) property would be charged the flat ERU, while all other properties would be charged in increments of ERUs. However, since Falls Church has detailed impervious data for every SFD/SFA property, and because there is a great deal of variety in SFD/SFA characteristics, AMEC recommends that the City consider a rate per billing unit rather than a flat fee/ERU approach. This would result in a more equitable fee distribution among residential properties.

Impervious Billing Units

As noted above, the impervious cover mapped within the City allows for per-parcel measurements of impervious surfaces for a stormwater fee. To calculate fees, a set rate would be charged per billing unit of impervious area on each parcel. Based on the mapping criteria description provided for the impervious data (see page 6), AMEC recommends 200 square feet as the minimum defensible billing unit that the

City would want to consider. Comparatively, however, many localities have a higher billing unit to account for variation in the impervious layer. When choosing a final billing unit, the City will need to balance more equity with the higher cost to maintain a more detailed impervious surface layer.

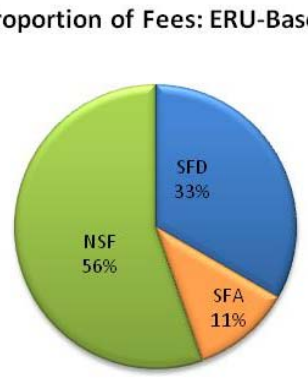
6. Comparison of Cost-Burden Distribution

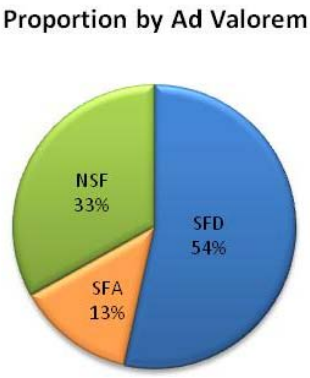
The following table and charts illustrate how potential program costs are distributed under each funding method. This information is meant to assist the City in understanding how the cost-burden shifts as the revenue generation approach changes. A placeholder value of $1M was used to determine sample rates and ad valorem values. Once the total cost of service (the total revenue goal) is determined, rates and resulting fees can be more accurately modeled.

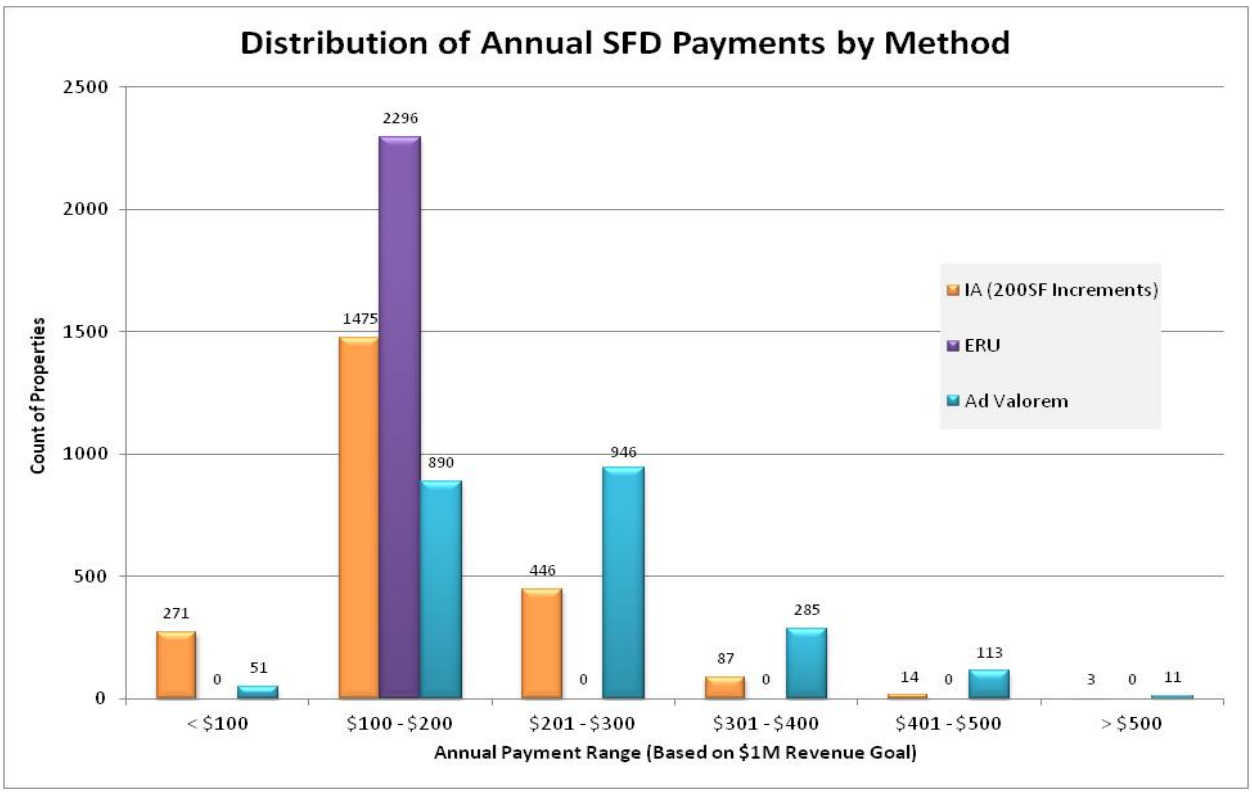
Using a stormwater user fee approach based on units of imperviousness, the proportion of program cost for SFD, SFA, and NSF closely approximates the distribution of impervious area in the City. Table 2 shows the distribution for 200 square feet and 1,000 square feet billing units for illustration purposes. The final units would need to be determined based on the considerations presented in Section 5. In general, there is not a significant shift in cost burden from 200 square feet to 1,000 square feet billing units, but when measurements are rounded to larger billing units some people end up paying for more or less area than what really exists on their properties. An ERU approach results in a shift in overall burden toward SFA properties, with a reduced burden on SFD properties. Finally, using an ad valorem approach, the burden is shifted more heavily to SFD and SFA properties, and is no longer proportional to impervious area distribution. It is important to note that using an ad valorem approach also means that the approximately 300 tax exempt properties do not pay for stormwater services and that all other properties pay slightly more of the total program cost. The charts and graphs following Table 2 illustrate the fee distribution and change in fee values within each property group.

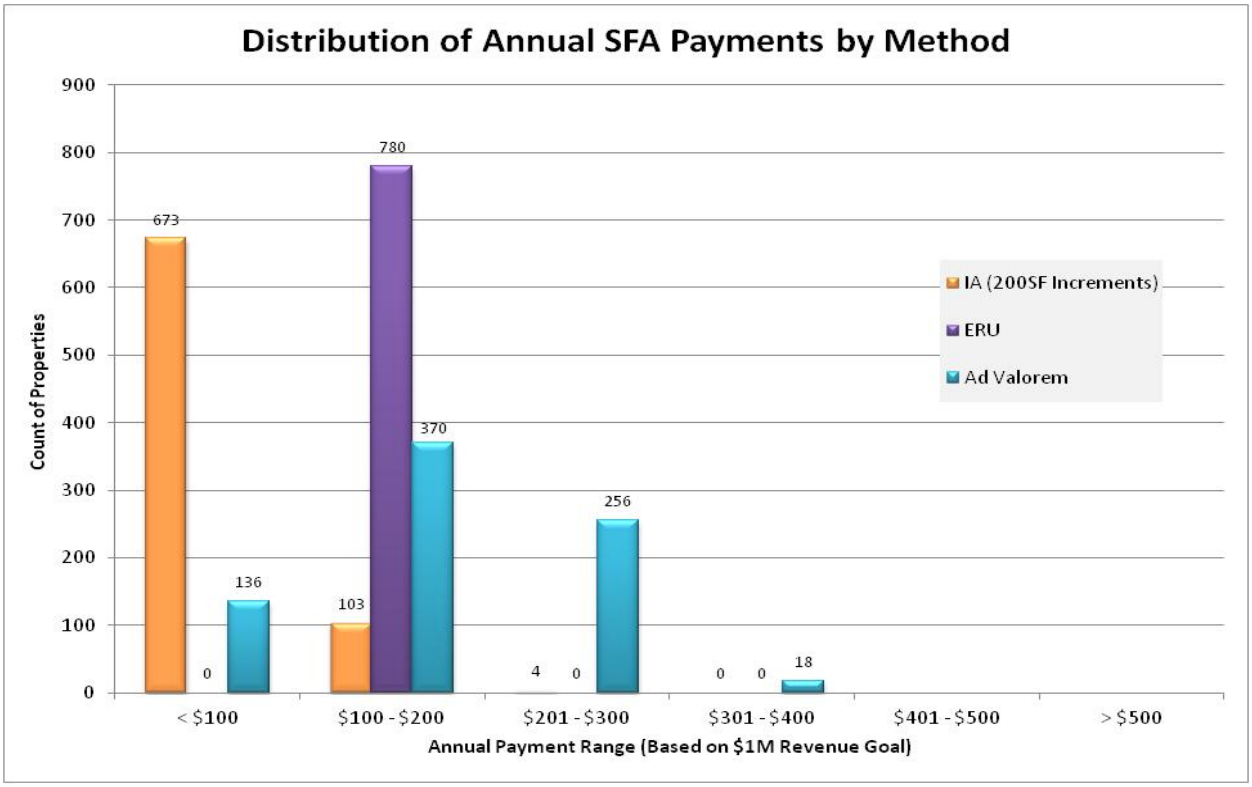
Table 2. Distribution of Cost-Burden Using Different Revenue Generation Methodologies

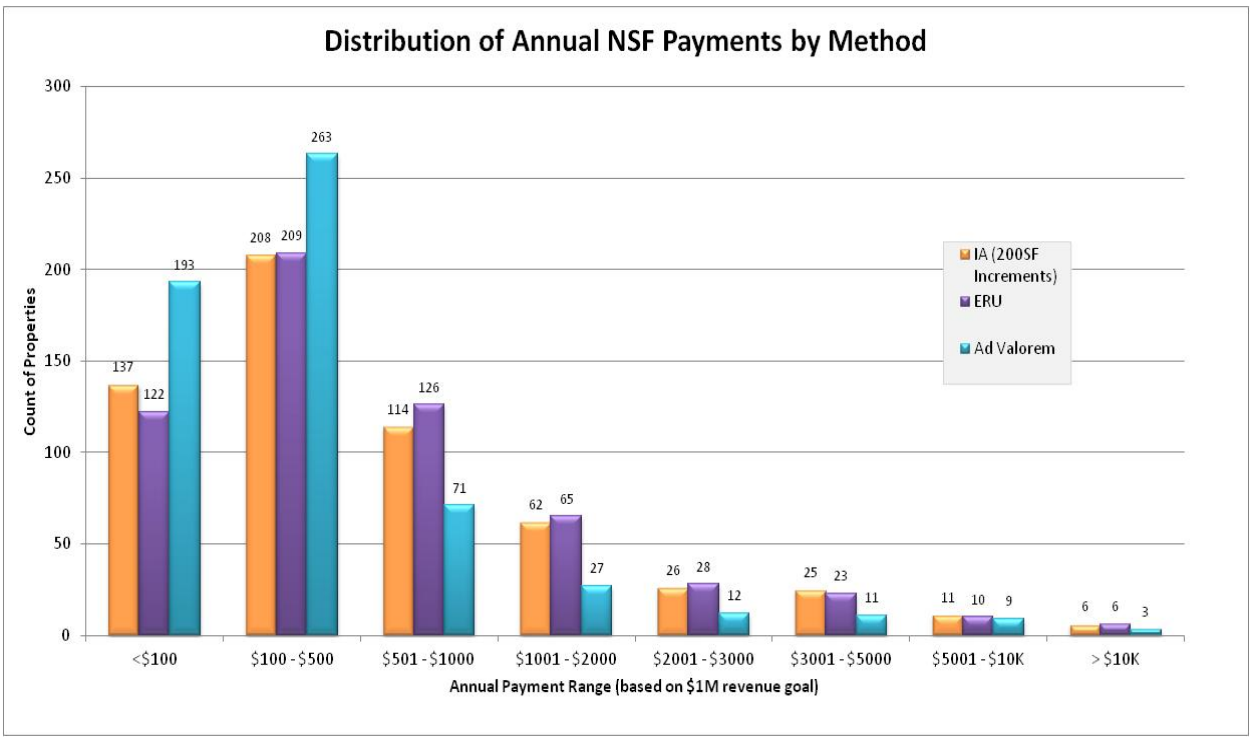
Sample Revenue Goal		$1,000,000	SFD	Pct.	SFA	Pct.	NSF	Pct.
	Total Parcels	*3,665*	*2,296*	*63%*	*780*	*21%*	*589*	*16%*
Methodology Options	Total IA	17,894,781	6,820,959	38%	927,076	5%	10,146,746	57%
	200 SqFt Units	91,280						
	Annual Rate	$10.955302	$386,251	39%	$54,919	5%	$558,830	56%
	(at least 200 sq ft of IA; IA then rounded to nearest whole unit)							
	1K SqFt Units	17,951						
	Annual Rate	$55.707203	$379,923	38%	$54,983	5%	$565,094	57%
	Equiv. Res. Value	2,755						
	ER Units (ERUs)*	6,894.0						
	Annual Rate	$145.05	$333,043	33%	$113,142	11%	$553,815	55%
	(IA for NSF btwn 200 and 2,755 sq ft = 1 ERU; rounded up to next 1/2-ERU after that, all SFA and SFD = 1 ERU)							
	Ad Valorem							
	Total Assessed Value	$2,999,897,000						
	AV Rate per $100	$0.033334	$534,919	53%	$134,288	13%	$330,793	33%






Distribution of Annual SFD Payments by Method
Count of Properties
2500
2000
1500
1000
500
0
271
0
51
1475
2296
890
446
0
946
87
0
285
14
0
113
3
0
11
< $100
$100 - $200
$201 - $300
$301 - $400
$401 - $500
> $500
Annual Payment Range (Based on $1M Revenue Goal)
IA (200SF Increments)
ERU
Ad Valorem


Distribution of Annual SFA Payments by Method
Count of Properties
900
800
700
600
500
400
300
200
100
0
673
0
136
103
780
370
4
0
256
0
0
18
< $100
$100 - $200
$201 - $300
$301 - $400
$401 - $500
> $500
Annual Payment Range (Based on $1M Revenue Goal)
IA (200SF Increments)
ERU
Ad Valorem



7. Timeline for Implementation

Table 3 provides a preliminary timeline for implementation of the different billing systems and revenue generating methods. The timeline assumes a project start time of January 1st. All revenue generating methods require custom upgrades to MUNIS for the billing mechanism to show a separate fee (regardless of whether it is ad valorem or impervious cover based). The required lead-time for MUNIS upgrades is unknown, but is assumed to be at least two months based on discussions with the City Treasurer.

It is also important to note that if the City is not able to meet milestones for billing using the real property tax, the next opportunity to send a bill is in November (with the payment due on December 5th). This would require billing for only half a year. Conversely, the water utility bill is sent out quarterly for most users (monthly for large users) and would not require bill splitting. As a result, there is less revenue impact to starting late using the water utility bill.

Table 3. Timeline for Implementation of Billing Mechanisms and Revenue Generating Methods

	Revenue Type	January	February	March	April	May	June	July
Real Property Tax Bill	Ad Valorem - Service District Fee	Request MUNIS Upgrade		Adopt Ordinance and Rate	Council Approves Rate Bill Sent Late April		First Payment Due June 5th	
	Utility Fee	Beta Master Account File (MAF) Request MUNIS Upgrade		Adopt Utility Ordinance Final MAF in Mid March	Council Approves Rate Bill Sent Late April		First Payment Due June 5th h	
Water/Sewer Bill	Utility Fee	Beta MAF Request MUNIS Upgrade		Adopt Utility Ordinance	Council Approves Rate		Final MAF	Bill Sent with Quarterly Invoice